CLAIMS

1/ The use of an ultrasound transducer having a nominal excitation frequency greater than 20 MHz, preferably lying in the range 50 MHz to 80 MHz, with long focal length, greater than 10 mm, preferably about 25 mm, in making a device for deep penetration echographic exploration of tissues or organs of the human or animal body, specifically of the eyeball, in particular of the posterior segment of the eyeball, more particularly of the macular region, and also of tissues situated behind the eyeball such as the oculomotor muscles, eye socket fat, and the optic nerve.

2/ The use of an ultrasound transducer having a nominal excitation frequency greater than 20 MHz, preferably lying in the range 50 MHz to 80 MHz, with long focal length, greater than 10 mm, preferably about 25 mm, in implementing a method of deep penetration echographic exploration of tissues or organs of the human or animal body, specifically of the eyeball, in particular of the posterior segment of the eyeball, more particularly of the macular region, and also of tissues situated behind the eyeball such as the oculomotor muscles, eye socket fat, and the optic nerve.

3/ A use according to claim 2, characterized in that the ultrasound transducer is moved over the pars plana to avoid the ultrasound beam being absorbed by the lens of the eye.

4/ A use according to claim 2 or 3, characterized in that the ultrasound transducer is protected by a membrane of plastics material.

5/ A device for deep penetration echographic exploration of tissues or organs of the human or animal body, the device comprising a high frequency transceiver system

operating in the range 20 MHz to 200 MHz that is coupled to an ultrasound transducer of long focal length, greater than 10 mm, preferably about 25 mm, and a system for amplifying and storing the radiofrequency signal as back-scattered after exploration, preferably associated with a system for recording the amplified signal and/or a system for processing the signal in the form of an image, and/or a system for processing the signal in order to perform tissue characterization.

6/ A device according to claim 4, characterized in that the ultrasound transducer is implemented in the form of a probe controlled so as to move in the vicinity of the anterior wall of the eye.

7/ A device according to claim 6, characterized in that the ultrasound transducer is displaced along two orthogonal axes.

8/ A device according to claim 6, characterized in that the transducer is subjected to arcuate displacement.

9/ A device according to claim 7, characterized in that the ultrasound transducer is focused along a third axis orthogonal to the two orthogonal displacement axes.

10/ A device according to any one of claims 5 to 8, characterized in that the ultrasound transducer is focused without moving by using an electronic focusing system.

11/ A device according to any one of claims 5 to 10, characterized in that the ultrasound transducer is protected by a membrane of plastics material.